

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(PCT Rule 71.1)

Date of mailing (day/month/year)	16.11.2007
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Applicant's or agent's file reference  
3104/1- 38008

### IMPORTANT NOTIFICATION

International application No.  
PCT/US2006/029666

International filing date (day/month/year)  
31.07.2006

Priority date (day/month/year)  
03.08.2005

Applicant  
Entegris, inc.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions are patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



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NOV 18 2007




# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>3104/1-38008</b>	<b>FOR FURTHER ACTION</b> <div style="text-align: right; font-size: small;">See Form PCT/PEA/416</div>	
International application No. <b>PCT/JS2006/029666</b>	International filing date (day/month/year) <b>31.07.2006</b>	Priority date (day/month/year) <b>03.08.2005</b>
International Patent Classification (IPC) or national classification and IPC <b>INV. H01L21/677</b>		
Applicant <b>Entegris, Inc.</b>		
<ol style="list-style-type: none"> <li>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</li> <li>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</li> <li>3. This report is also accompanied by ANNEXES, comprising:               <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of <u>3</u> sheets, as follows:                   <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box.                 </div> </li> <li>b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</li> </ol> </li> <li>4. This report contains indications relating to the following items:               <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report  <input type="checkbox"/> Box No. II Priority  <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  <input type="checkbox"/> Box No. IV Lack of unity of invention  <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  <input type="checkbox"/> Box No. VI Certain documents cited  <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application  <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application             </div> </li> </ol>		
Date of submission of the demand  <b>2007-06-04</b>	Date of completion of this report  <b>16.11.2007</b>	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80228 Munich Tel. +49 89 2399-0 Fax: +49 89 2399-4455 Fax: +49 89 2399-4455	Authorized officer  <b>Palsdor, Bernd</b>  Telephone No. +49 89 2399-5953	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/US2006/029666

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**Box No. I Basis of the report**

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**1. With regard to the language, this report is based on**

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
  - ☐ international search (under Rules 12.3(a) and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4(a))
  - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

**2. With regard to the elements\* of the international application, this report is based on** *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-20 as originally filed

**Claims, Numbers**

1-15 filed with the demand

**Drawings, Sheets**

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

**3. ☒ The amendments have resulted in the cancellation of:**

- ☐ the description, pages
- ☒ the claims, Nos. 16-19
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

**4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	<u>1-15</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-15</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-15</u>
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

see separate sheet

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY  
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Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: EP-A-1 343 202 (EBARA CORP [JP]) 10 September 2003 (2003-09-10)
- D2: EP-A-0 617 573 (IBM [US]) 28 September 1994 (1994-09-28) cited in the application

**1. Novelty (Article 33(1) PCT)**

1.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document) a transfer container, i.e. a substrate transport pod and a method for loading the substrates into a pod from an atmosphere of a first process, and circulating a gaseous atmosphere through interior of the pod in such a way to selectively remove at least one contaminant including moisture, particulate substances or chemical substances, and to expose the substrates to a controlled atmosphere intermittently or continually while the substrates are held in the pod before unloaded from the pod and introduced into a second process. The transfer container (1) of D1 has an enclosure, a purifier comprising gaseous contaminant capture medium (6), dehumidifying agent (8) surrounded by a particle filter (5) attached to the enclosure (cf. Figs. 4-11), the purifier configured to purify fluid (i.e. air) flowing into the enclosure and a fluid propeller, i.e. a fan (7) attached to the enclosure (cf. Fig. 71b), propelling fluid through the purifier into the enclosure. D1 also discloses a front opening unified pod (FOUP) having the same characteristics as the FOUP as specified in claim 5 of the present application, including a battery as energy source for the fan (9) attached to the enclosure and the purification material being enclosed in a replaceable cartridge (cf. par. 00065). D1 further discloses the independent particle filter (5) and contaminants filter (6) which can be replaced independently from each other at the end of the service life (cf. Fig. 39).

Document D2 discloses a vapour drain system for a transfer container for wafers (SMIF pod 40) having an enclosure (44) with an aperture (136'). A vapour removal element (138', i.e. a purifier) is enclosed across the aperture and includes purification

materials (142,142',140). Air is forced into the pod (40) through aperture and purifier (136') by a fan; air forced into the pod through aperture (136') leaves the pod through a second (or more) aperture(s) with vapour removal element (136) (cf. Figs. 16 and 17).

- 1.2 The subject-matter of amended independent claim 1 differs from this known transfer containers of D1 or D2 in that the purifier of claim 1 is configured as plurality of beds, the beds being configurable such that only one bed purifies fluid flowing into the enclosure. The two independent filters disclosed in Fig. 39 and par. 00065 of D1 are not the same feature, however, because they do not represent two or a plurality of independent beds. In contrast, the two filters (5) and (6) of D1 are placed in a series, not parallel, as claim 1 of the present application teaches in its current form.
- 1.3 The subject-matter of independent claim 1 is therefore new (Article 33(2) PCT).

## **2. Inventive Step (Article 33(2) PCT)**

- 2.1 The objective problem to be solved by the present invention may be regarded as the provision of a transfer container for wafer transfer which allows continuous and uninterrupted purging of the container with a fluid (gas).
- 2.2 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT), because the prior art does neither disclose nor suggests a purifying system for purging fluids flowing into a wafer transfer container consisting of two or a plurality of beds, allowing only one of said beds purifies fluid flowing into the container. This distinguishing feature of the claimed subject-matter of claim 1 allows continuous purging of a container with purified fluid while maintenance operations are performed on the unused bed(s). This is a non-obvious modification of the prior art for the person skilled in the art, because in the light of D1 and/or D2 he would never have an incentive to provide the purifying system for the wafer transfer container consisting of a plurality of purifying beds being used in parallel or alternatively.

- 2.3 Claims 2 to 15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

**Re Item VII.**

1. Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (documents D1, D2) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
2. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor is this document identified therein.

**Re Item VIII.**

1. The vague and imprecise statement in the description on page 20 ("*...without departing from the scope of the invention encompassed...*") implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.
2. The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT, i.e. the description has not been adapted to the amended claims, which causes a lack of clarity in the sense of Article 6 PCT.
3. The wording "incorporated by reference" (see p. 1, par. 1, p. 9, l. 15-16, p. 18, l. 4-5, l. 24-25) is usually deleted from an application as it renders the scope of the description unclear (Article 6 PCT). If matter in the document referred to is essential

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to satisfy the requirements of Article 5 PCT, at least a summary thereof should be incorporated into the description (Guidelines C-II, 4.17). With respect to the current practice the wording "incorporated by reference" should have been deleted.